Enrollment No:-_____ Exam Seat No:-_____

C.U.SHAH UNIVERSITY

Summer-2015

Subject Code: 4LS02CHM1 **Subject Name: Stereochemistry in Organic Synthesis**

Course Name: B.Sc. (Micro,Biotech) Date: 22/5/2015

Semester: II Marks: 70

Time: 10:30 TO 01:30

Instructions:

1) Attempt all Questions in same answer book/Supplementary.
2) Use of Programmable calculator & any other electronic instrument prohibited.
3) Instructions written on main answer book are strictly to be obeyed.
4) Draw neat diagrams & figures (if necessary) at right places.
5) Assume suitable & perfect data if needed.

Q-1 Do as Directed.

a) Define atomic radius and Van der Wall Radius. (02)

b) Write short note on carbene. (02)

c) What is rate of reaction? (02)

d) Define activation energy. (02)

e) State Hoffman rule with suitable example. (02)

f) Write a note on meso compounds. (02)

g) What are stereoselective and stereospecific reactions? (02)

Attempt any four from Q-2 to Q-8.

Q-2 Answer the following.

a) Explain internal nucleophilic substitution and unimolecular elimination (conjugated base) reaction mechanism with suitable example. (07)

b) Explain the stability of free radicals based upon resonance and hyperconjugation. (07)

Q-3 Answer the following in detail. (14)

a) Write a note on stability of carbocation based upon inductive effect and resonance. (07)

b) What is Friedel Crafts Acylation reaction? Write different steps involved in the reaction mechanism. (07)

Q-4 Answer the following.

a) What are the differences between SN1 and SN2 reaction mechanism? (07)

b) What is hybridization? Explain the structure of ethane based upon the concept of hybridization. (07)

Q-5 Answer the following.

a) Write a note on effect of substituents on the strength of base. (07)

b) Discuss the basic criteria for aromaticity and antiaromaticity by suitable example. (07)

Q-6 Answer the following.

a) Write a note on displacement of electron through hyperconjugation with suitable example. (07)

b) Write differences between tautomerization and resonance with suitable example. (07)

Q-7 Answer the following.

a) Write a note on concept of chirality and chirality in organic compounds. (07)

b) What are the different steps involved in drawing Fischer projection of organic compounds. (07)

Q-8 Answer the following.

a) Explain R,S and thereo-erythro nomenclature for stereoisomers with suitable examples. (07)

b) Write a note on chirality in a molecule with no stereogenic centre. (07)